

Claims

- 1.-19. (canceled)
20. (currently amended) A thermoplastic polymer blend comprising a thermoplastic starch, at least one synthetic polymer, and a hydrolysis component hydrolyzed polyvinyl acetate (PVAc) saponified to a hydrolysis degree of 20 to 70 %, and an acidic catalyst on PVAc basis, wherein the starch component of the polymer blend has a molecular weight which is only minimally reduced relative to native starch, wherein the thermoplastic polymer blend has a bi-continuous phase structure.
21. (original) The thermoplastic polymer blend according to claim 20, comprising extending agents, filling agents, internal lubricants, flow-improving agents, dyes, pigments, or mixtures thereof.
22. (currently amended) The thermoplastic polymer blend according to claim 20, comprising, relative to the total composition of the polymer blend, 30-70 % by weight of the thermoplastic starch, 20-40 % by weight of the synthetic polymer, and 6-25 % by weight of the hydrolysis hydrolyzed PVAc component on PVAc basis.
23. (canceled)
24. (original) The thermoplastic polymer blend according to claim 20, wherein the synthetic polymer is a biologically degradable aliphatic polyester or a polyester copolymer or polyvinyl acetate or a polyvinyl acetate copolymer or a water-resistant starch derivative or a water-resistant cellulose derivative or polyvinyl alcohol or a polyvinyl alcohol copolymer.
25. (currently amended) A method for producing a thermoplastic polymer blend by reactive extrusion, the method comprising the steps of:
- mixing native starch, at least one hydrophobic polymer, a hydrolyzed component on polyvinyl acetate (PVAc) saponified to a hydrolysis degree of 20 to 70 % basis, and at least one of lower polyfunctional alcohols and water; and
 - adding an acidic catalyst to the mixture of step a) and extruding the mixture in the presence of the acidic catalyst.
26. (original) The method according to claim 25, wherein the acidic catalyst is an organometallic compound selected from the group consisting of dibutyl tin oxide,

dibutyl tin dilaurate, tetra-2-ethylhexyl titanate, triethanolamine zirkonate, titanate compound chelated with lactic acid, triethanolamine titanate, and alkyl titanate.

27. (original) The method according to claim 26, wherein the mixture comprises 0.5 % to 2 % of the acidic catalyst, relative to the total weight of the mixture.

28. (original) The method according to claim 25, wherein the acidic catalyst is a Lewis acid.

29. (original) The method according to claim 28, wherein the mixture comprises 0.5 % to 2 % of the acidic catalyst, relative to the total weight of the mixture.

30. (original) The method according to claim 25, wherein the acidic catalyst is an acid selected from the group consisting of nitric acid, sulfuric acid, hydrochloric acid, and p-toluene sulfonic acid.

31. (currently amended) The method according to claim 30, wherein the mixture comprises 0.05 to 0.2 % of the acidic catalyst, relative to the its total weight of the mixture.

32. (canceled)

33. currently amended) The method according to claim 25 [32], wherein the polyvinyl acetate is saponified to a hydrolysis degree of 30 % to 55 %.

34. (currently amended) The method according to claim 25 [32], wherein the polyvinyl acetate is prepared as an aqueous dispersion and is saponified at 120 - 140 °C with sodium hydroxide.

35. (currently amended) The method according to claim 25 [32], further comprising the step of adjusting the hydrolyzed component on polyvinyl acetate basis to a residual moisture contents of 15 - 35 %.

36. (currently amended) The method according to claim 25, wherein in the step a) the native starch, the hydrolyzed component on polyvinyl acetate basis, and the catalyst are mixed to a well-flowing powder mixture.

37. (original) The method according to claim 36, wherein approximately 1 % stearic acid, relative to the total weight of the powder mixture, is added to the powder mixture.

38. (original) The method according to claim 36, wherein approximately 1 %

silica gel, relative to the total weight of the powder mixture, is added to the powder mixture.

39. (currently amended) The method according to claim 25 [32], wherein the acidic catalyst is metered in a liquid state mixed with glycerin.